**2006-08 ENGINE**

**Engine Assembly - Civic GX**

## SPECIAL TOOLS

**NOTE: Refer to ENGINE ASSEMBLY (EXCEPT HYBRID) article for items not shown in this article.**

| Ref. No. | Tool Number | Description | Qty |
|---|---|---|---|
| ① | 07AAK-SNAA120 | Engine Hanger Plate | 1 |
| ② | 07AAK-SNAA400 | 1.8 Support Eyelet | 1 |
| ③ | 07AAK-SNAA500 | 1.8 Support Bolt | 1 |

**Fig. 1: Identifying Special Tools**

## ENGINE REMOVAL

### Special Tools Required

- Engine hanger plate 07AAK-SNAA120
- 1.8 support eyelet 07AAK-SNAA400
- 1.8 support bolt 07AAK-SNAA500
- Front subframe adapter VSB02C000016 *
- 2006 Civic engine hanger VSB02C000025 *
- Engine support hanger, A and Reds AAR-T-12566 *

* : Available through Honda Tool and Equipment Program, 888-424-6857

**NOTE:**

- **Use fender covers to avoid damaging painted surfaces.**

- **To avoid damage, unplug the wiring connectors carefully while holding the connector portion.**
- **Mark all wiring and hoses to avoid misconnection. Also, be sure that they do not contact other wiring, hoses, or interfere with other parts.**

1. Close the manual shut-off valve.

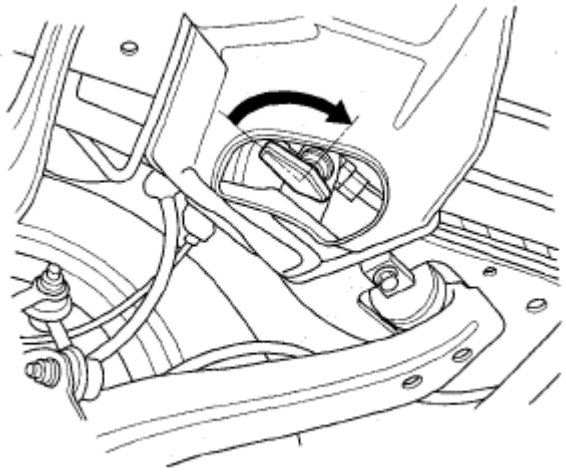

**Fig. 2: Closing Manual Shut-Off Valve**

2. To reduce pressure in the fuel lines, start the engine, and run it until it stalls.
3. Make sure you have anti-theft codes for the audio system and navigation system (if equipped), then write down the audio presets.
4. Secure the hood in the wide open position (Position the support rod in the lower hole).

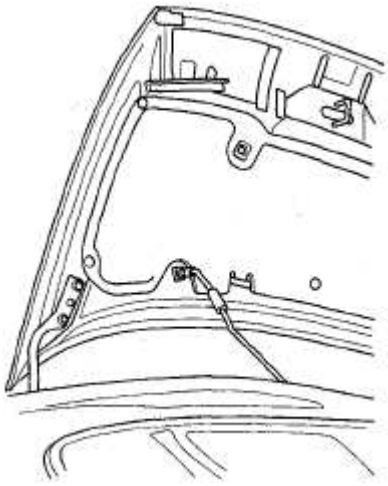

**Fig. 3: Identifying Hood**

5. Disconnect the negative cable from the battery, then the positive cable.
6. Remove the battery.
7. Remove the air cleaner housing assembly, refer to **AIR CLEANER REMOVAL/INSTALLATION** .
8. Remove the cowl cover and under-cowl panel, refer to **COWL COVER REPLACEMENT** .
9. Remove the fuel feed hose.

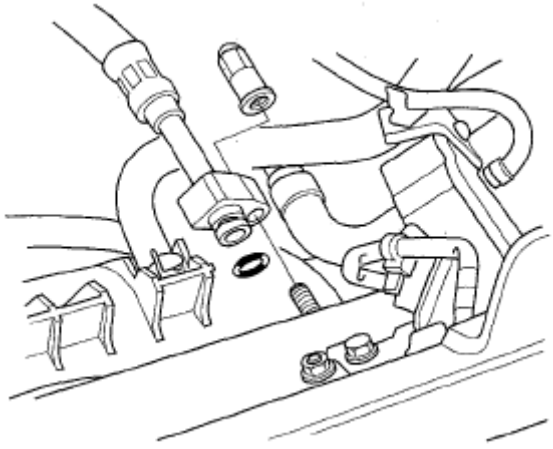

**Fig. 4: Identifying Fuel Feed Hose**

10. Remove the vacuum hose (A), brake booster vacuum hose (B), and power steering (P/S) hose clamp (C).

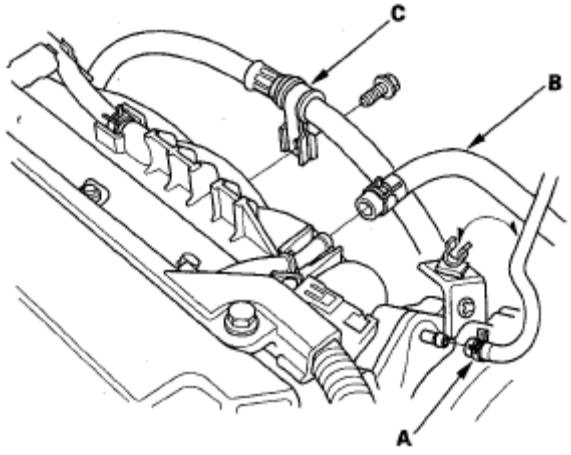


**Fig. 5: Identifying Vacuum Hose And Brake Booster Vacuum Hose**

11. Remove the battery cables (A) from the under-hood fuse/relay box.

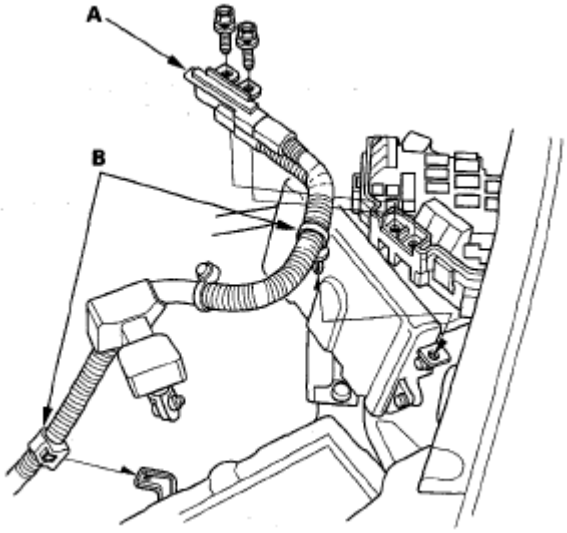


**Fig. 6: Identifying Battery Cables**

12. Remove the harness clamps (B).
13. Remove the powertrain control module (PCM) cover (A), then remove the three bolts (B) securing the PCM.

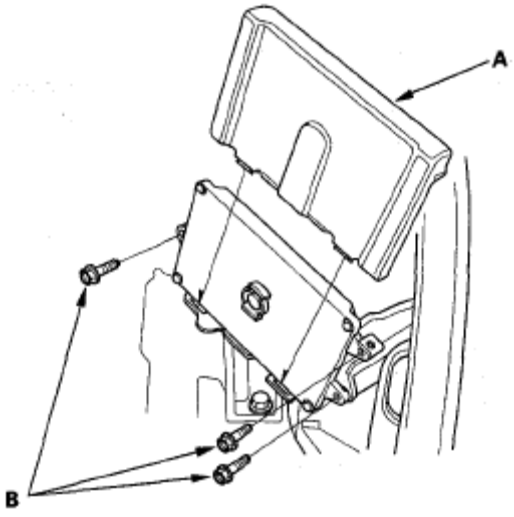


**Fig. 7: Identifying Powertrain Control Module (PCM) Cover**

14. Disconnect the PCM connectors (A) and the engine wire harness connectors (B).

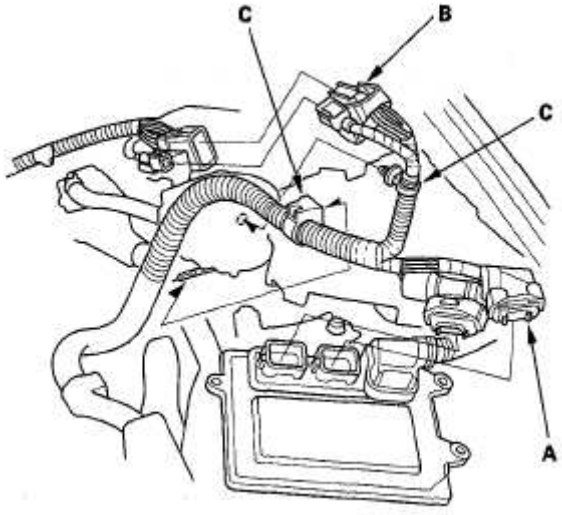


**Fig. 8: Identifying PCM Connectors And Engine Wire Harness Connectors**

15. Remove the harness clamps (C).
16. Remove the drive belt, refer to **DRIVE BELT REMOVAL/INSTALLATION** .
17. Remove the radiator cap.

18. Raise the vehicle on the lift to full height.
19. Remove the front wheels.
20. Remove the splash shield.

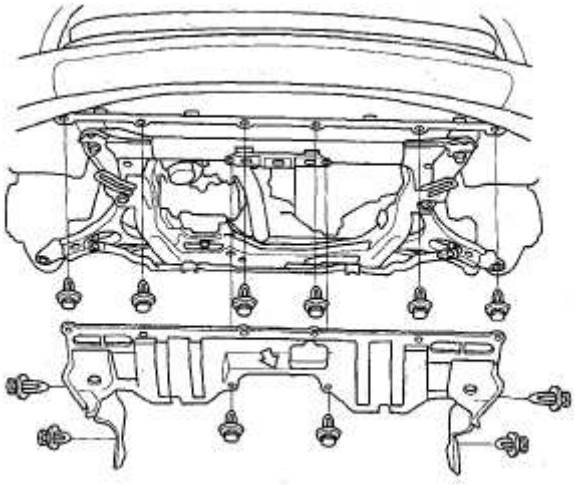

**Fig. 9: Identifying Splash Shield And Clips**

21. Loosen the drain plug in the radiator, and drain the engine coolant, refer to **COOLANT REPLACEMENT** .
22. Drain the engine oil, refer to **ENGINE OIL REPLACEMENT** .
23. Drain the transmission fluid (ATF), refer to **ATF REPLACEMENT** .
24. Remove exhaust pipe A.

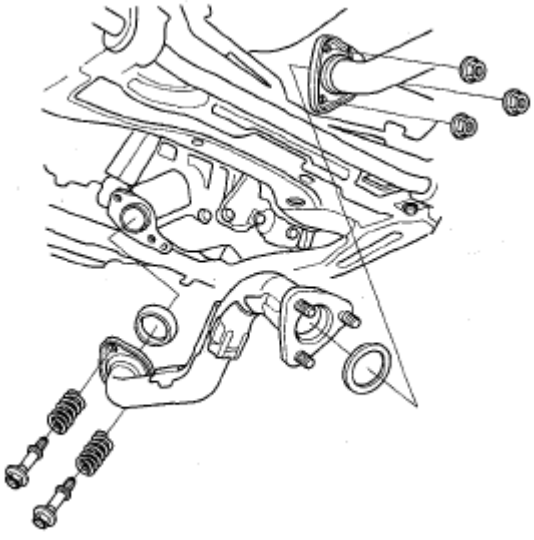

**Fig. 10: Identifying Exhaust Pipe**

25. Remove the shift cable, refer to step 41 on **TRANSMISSION REMOVAL** .
26. Separate the stabilizer links, refer to **STABILIZER LINK REMOVAL/INSTALLATION** .
27. Separate the knuckles from the lower arms, refer to **LOWER ARM REMOVAL/INSTALLATION** .
28. Remove the driveshafts, refer to step 8 on **DRIVESHAFT REMOVAL** . Coat all precision-finished surfaces with clean engine oil. Tie plastic bags over the driveshaft ends.
29. Remove the power steering (P/S) pump without disconnecting the P/S hoses from the pump.

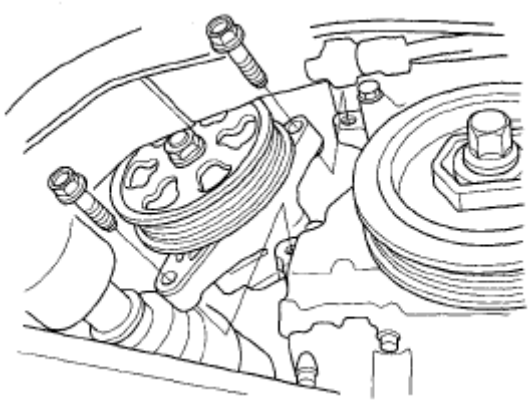

**Fig. 11: Identifying Power Steering (P/S) Pump**

30. Unclamp the power steering fluid line clamp (A) on the front subframe, and remove the P/S line mounting bolts (B).

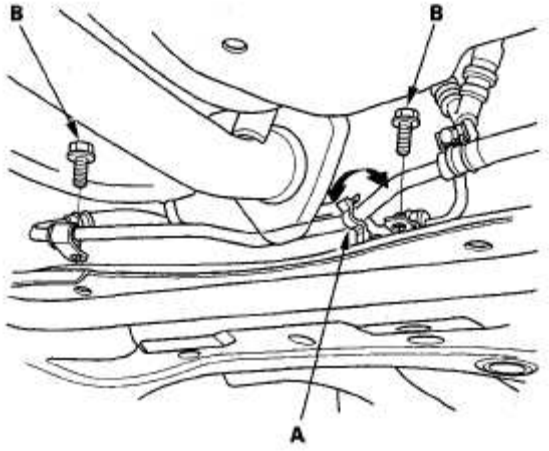


**Fig. 12: Identifying P/S Line Mounting Bolts**

31. Remove the steering gearbox mounting bolt (A), then remove the steering gearbox stiffener (B).

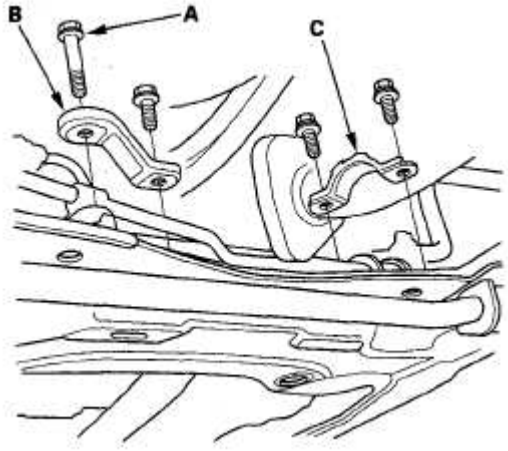


**Fig. 13: Identifying Steering Gearbox Mounting Bolt**

32. Remove the steering gearbox bracket (C).
33. Remove the steering gearbox mounting bolt (A), then remove the steering gearbox stiffener (B).

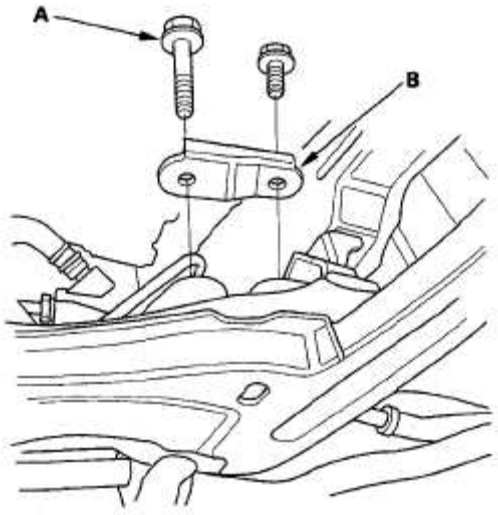


**Fig. 14: Identifying Steering Gearbox Mounting Bolt**

34. Lower the vehicle on the lift.
35. Remove the radiator, refer to **RADIATOR AND FAN REPLACEMENT** .
36. Disconnect the A/C compressor clutch connector (A), then remove the harness clamp (B).

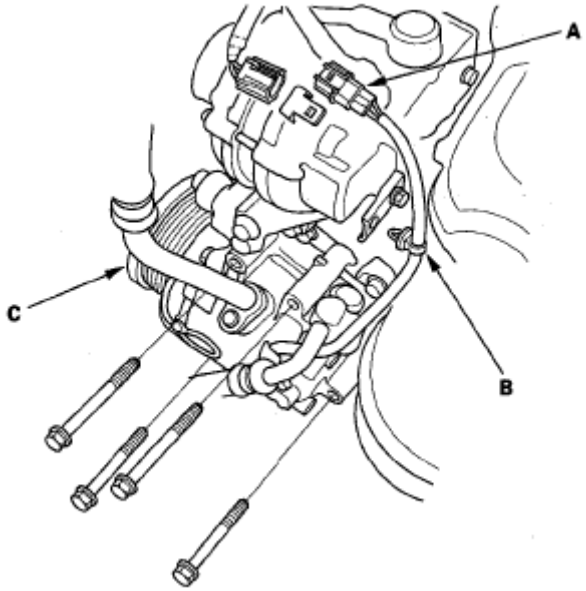


**Fig. 15: Identifying A/C Compressor Clutch Connector**

37. Remove the A/C compressor (C) without disconnecting the A/C hoses.
38. Remove the heater hoses.

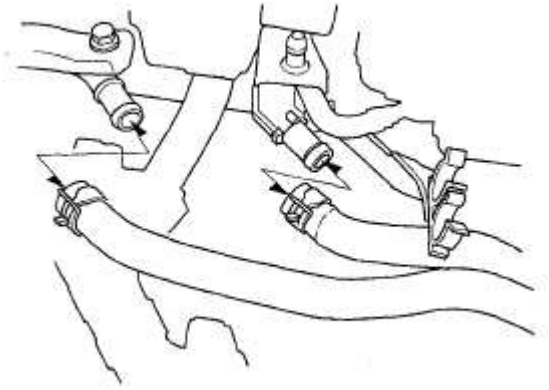

**Fig. 16: Identifying Heater Hoses**

39. Remove the air cleaner housing mounting bracket (A), and install 1.8 support eyelet (B) behind the breather pipe (C) and down to the threaded hole (D) on the cylinder head.

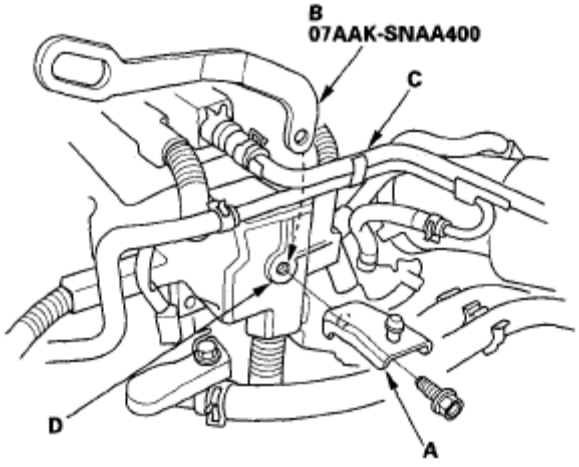


**Fig. 17: Identifying Air Cleaner Housing Mounting Bracket**

40. Attach the 1.8 support eyelet (A) to the cylinder head with the 1.8 support bolt (B). Tighten the bolt by hand.

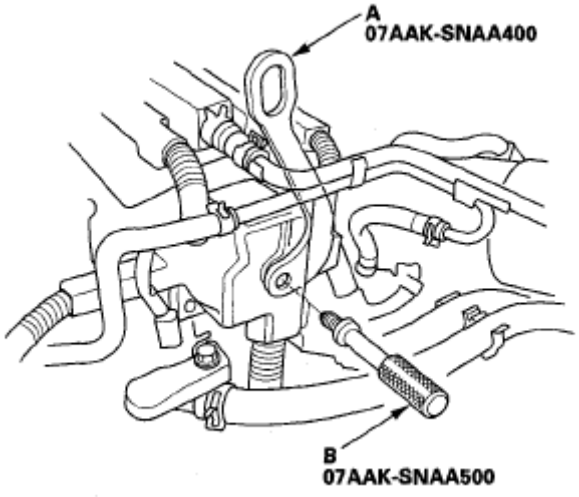


**Fig. 18: Identifying Special Tool**

41. Install the bulkhead, and tighten the mounting bolts, refer to step 11 on **RADIATOR AND FAN REPLACEMENT** .
42. Install the front leg assembly (A), hook (B), and wing nut (C) from an A and Reds engine support hanger (AAR-T-12566) onto the 2006 Civic engine hanger. Carefully position the 2006 Civic engine hanger on the vehicle, and attach the hook to the slotted hole in the 1.8 support eyelet (D). Tighten the wing nut by hand to lift and support the engine/transmission assembly.

**NOTE: Use care when working around the windshield.**

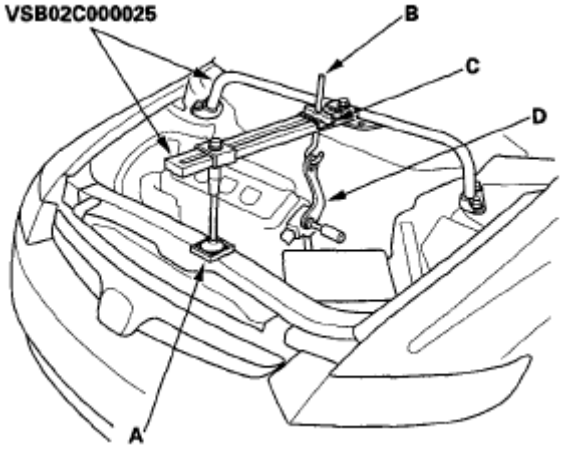


**Fig. 19: Identifying Special Tool**

43. Raise the vehicle on the lift to full height.
44. Remove the lower torque rod.

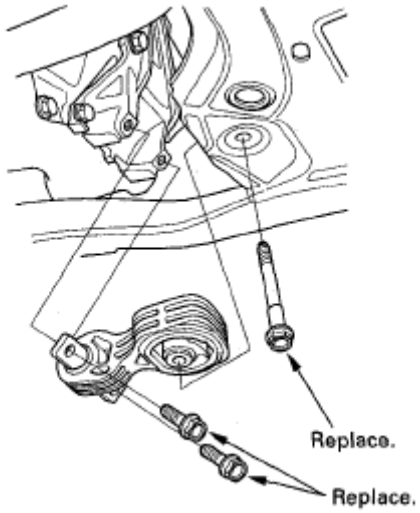


**Fig. 20: Identifying Lower Torque Rod**

45. Note the reference marks (A) on both sides of the subframe that line up with the body (B).

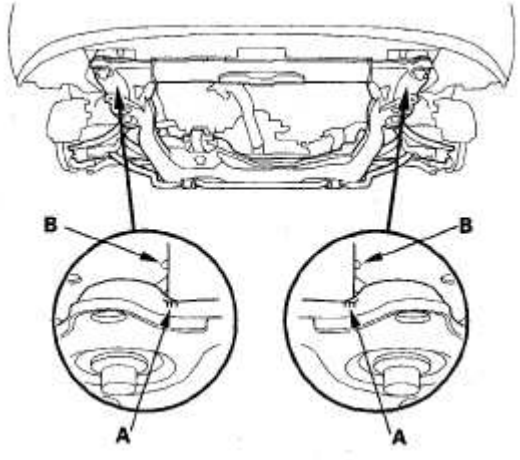


**Fig. 21: Identifying Reference Marks Of Subframe**

46. Loosen the mid-stiffener mounting bolts (A) on both sides.

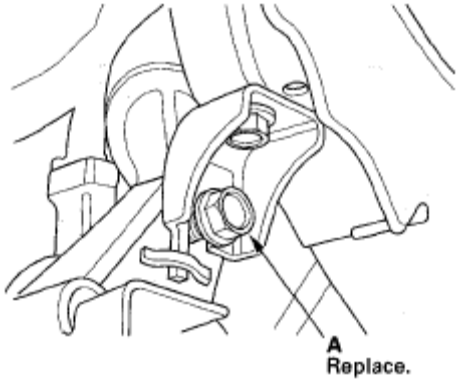


**Fig. 22: Identifying Mid-Stiffener Mounting Bolts**

47. Attach the front subframe adapter (A) to the subframe and hang the belt of the front subframe adapter over the front of the subframe, then secure the belt with its stop.

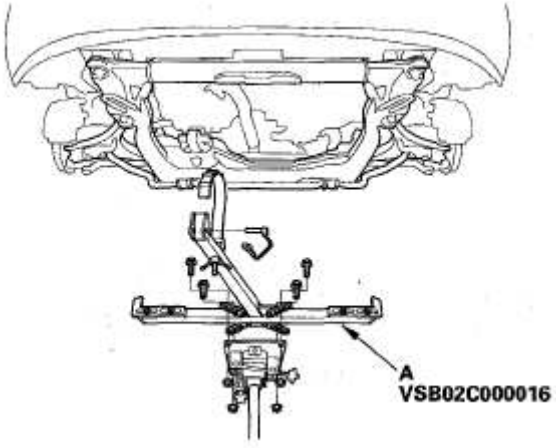


**Fig. 23: Identifying Front Subframe Adapter**

48. Raise the jack and line up the slots in the arms with the bolt holes on the corner of the jack base, then attach them with bolts securely.
49. Remove the subframe.

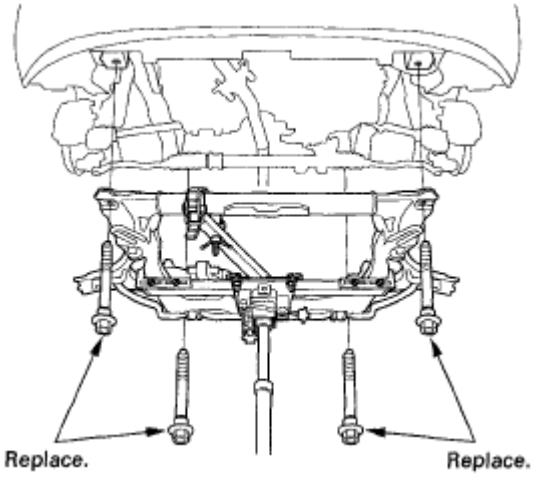


**Fig. 24: Identifying Subframe**

50. Lower the vehicle on the lift.
51. Remove the ground cable (A), then install the engine hanger plate with a 10 x 1.25 x 20 mm bolt (B).

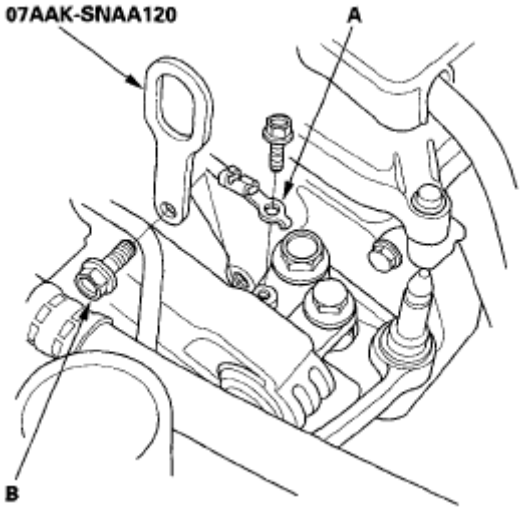


**Fig. 25: Identifying Ground Cable**

52. Attach a chain hoist (A) to the engine hanger plate (B) and transmission hook (C). Lift up on the engine/transmission assembly until it's securely supported by the chain hoist, and remove the engine support hanger from the engine and vehicle.

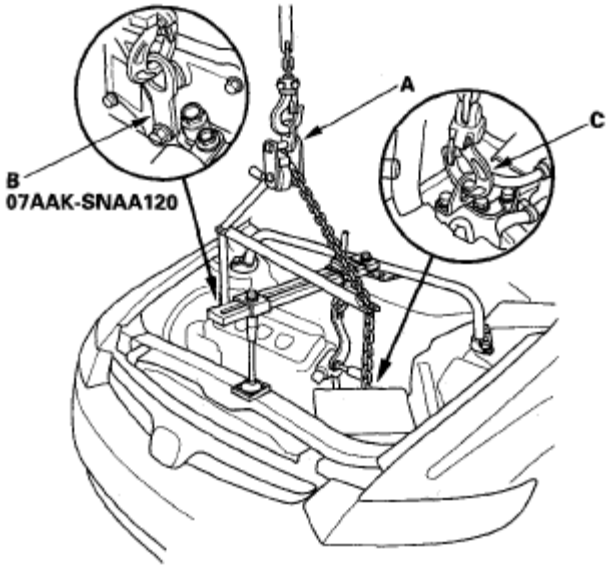


**Fig. 26: Attaching Chain Hoist To Engine Hanger Plate And Transmission Hook**

53. Remove the side engine mount bracket mounting bolt and nut.

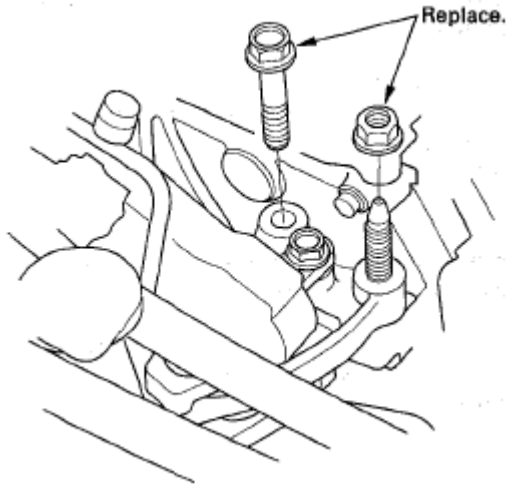


**Fig. 27: Identifying Engine Mount Bracket Mounting Bolt And Nut**

54. Remove the transmission mounting bolt and nuts (A).

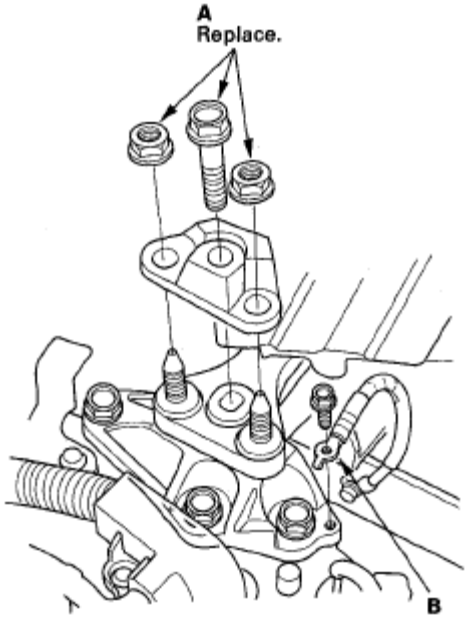


**Fig. 28: Identifying Transmission Mounting Bolt And Nuts**

55. Remove the ground cable (B).
56. Check that the engine/transmission is completely free of vacuum hoses, fuel and coolant hoses, and electrical wiring.
57. Slowly lower the engine/transmission assembly about 150 mm (6 in.). Check once again that all hoses and electrical wiring are disconnected and free from the engine/transmission, then lower it all the way.
58. Disconnect the chain hoist from the engine/transmission assembly.
59. Raise the vehicle all the way, and remove the engine/transmission assembly from under the vehicle.

## ENGINE INSTALLATION

### Special Tools Required

- Engine hanger plate 07AAK-SNAA120
- 1.8 support eyelet 07AAK-SNAA400
- 1.8 support bolt 07AAK-SNAA500
- Front subframe adapter VSB02C000016 *
- 2006 Civic engine hanger VSB02C000025 *

- Engine support hanger, A and Reds AAR-T-12566 *

* : Available through Honda Tool and Equipment Program, 888-424-6857

1. Install the accessory brackets and tighten their bolts to the specified torques.

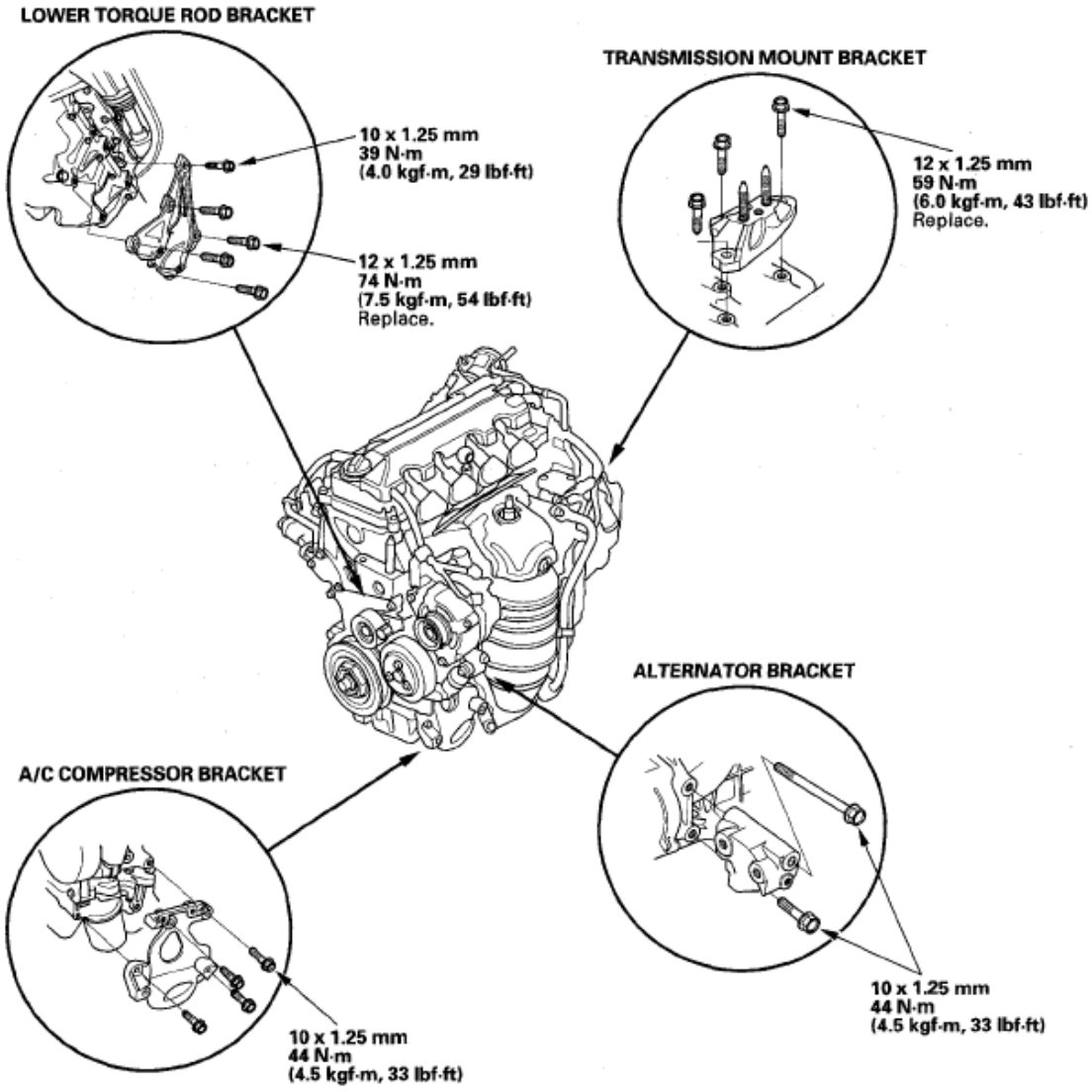


**Fig. 29: Identifying Engine Brackets (With Torque Specifications)**

2. Position the engine/transmission assembly under the vehicle. Be sure that they are properly aligned. Carefully lower the vehicle until the engine and transmission are properly positioned in the engine compartment. Make sure the vehicle is not resting on any part of the engine or transmission. Lift and support

the engine with a chain hoist (A) and carefully raise the engine/transmission assembly into place.

**NOTE: Reinstall the mounting bolts/support nuts in the sequence given in the following steps. Failure to follow this sequence may cause excessive noise and vibration, and reduce engine mount life.**

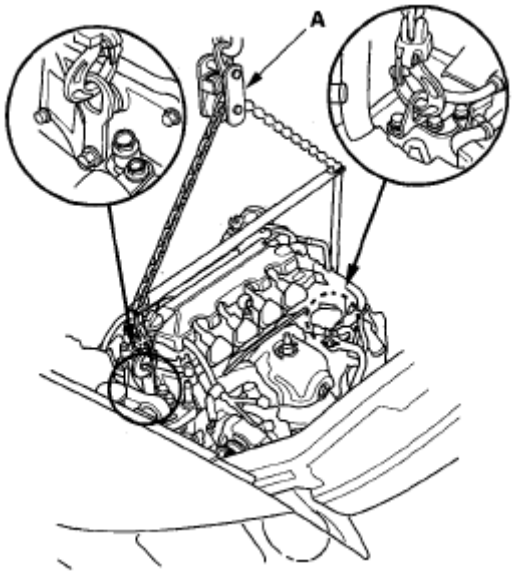


**Fig. 30: Lowering Engine/Tranmission Assembly**

3. Install 1.8 support eyelet (A) behind the breather pipe (B) and down to the thread hole (C) on the cylinder head.

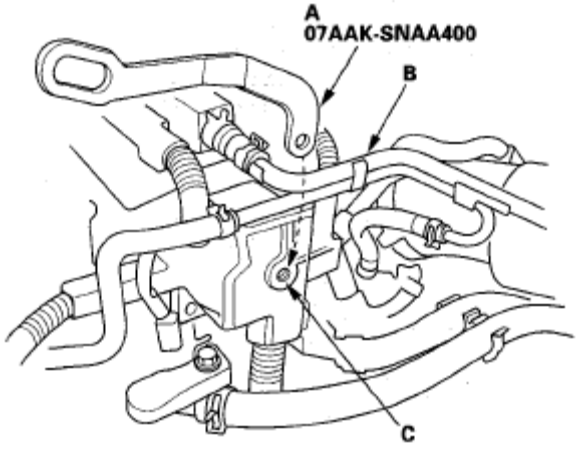

**Fig. 31: Identifying Support Eyelet (1 Of 2)**

4. Attach the 1.8 support eyelet (A) to the cylinder head with the 1.8 support bolt (B). Tighten the bolt by hand.

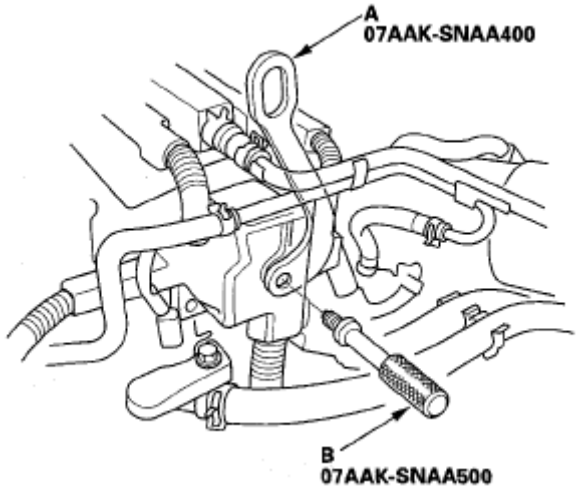


**Fig. 32: Identifying Support Eyelet (2 Of 2)**

5. Install the front leg assembly (A), hook (B), and wing nut (C) from an A and Reds engine support hanger (AAR-T-12566) onto the 2006 Civic engine hanger. Carefully position the 2006 Civic engine hanger on the vehicle, and attach the hook to the slotted hole in the support eyelet (D). Tighten the wing nut by hand to lift and support the engine/transmission assembly.

**NOTE: Use care when working around the windshield.**

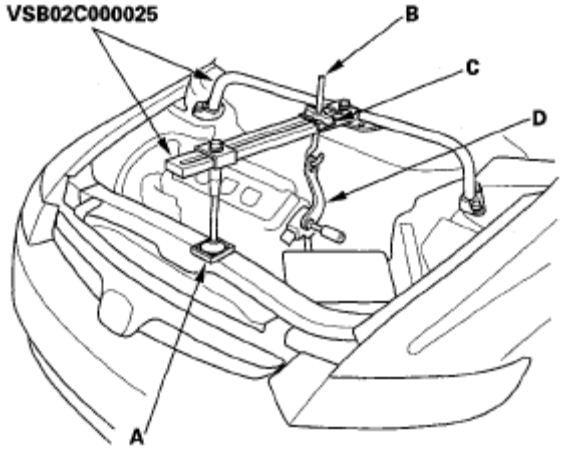

**Fig. 33: Identifying Engine Support Hanger**

6. Loosen the upper torque rod mounting bolt (A).

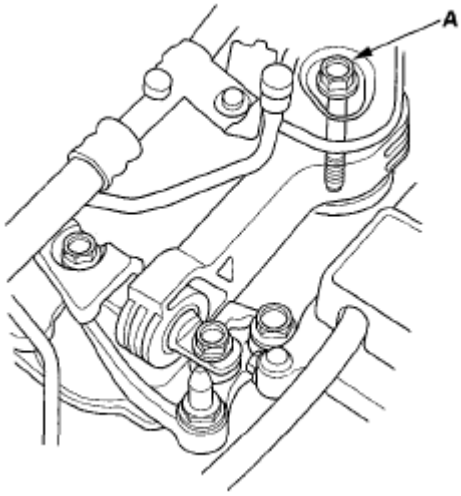


**Fig. 34: Identifying Mounting Bolt**

7. Tighten the new side engine mount bracket mounting bolt and nut.

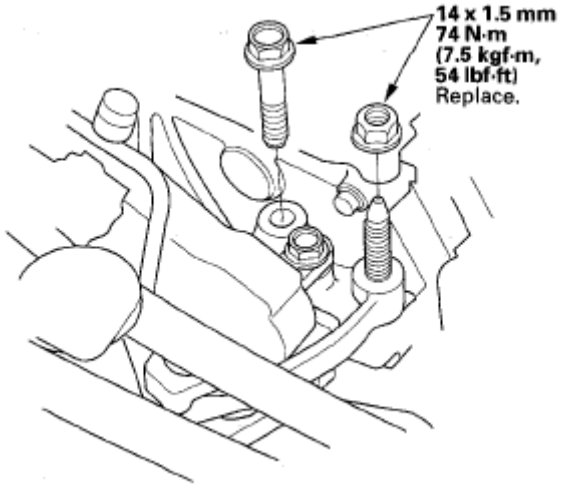


**Fig. 35: Identifying Engine Mount Bracket Mounting Bolt And Nut (With Torque Specifications)**

8. Tighten the new transmission mounting bolt and nuts (A).

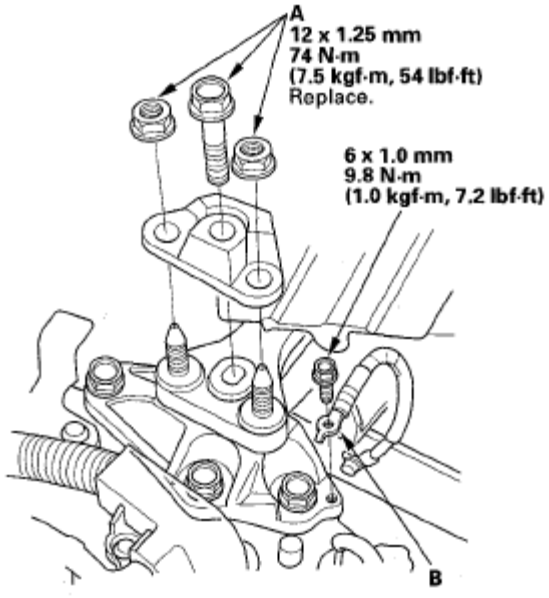


**Fig. 36: Identifying Transmission Mounting Bolt And Nuts (With Torque Specifications)**

9. Install the ground cable (B).
10. Remove the chain hoist, then raise the vehicle on the lift to full height.
11. Using the front subframe adapter (A) and a jack, raise the subframe up to body.

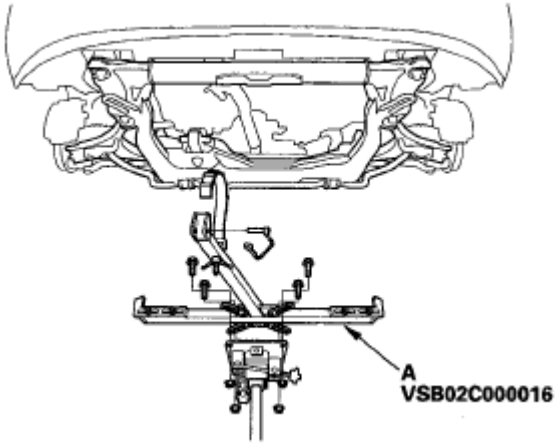


**Fig. 37: Identifying Front Subframe Adapter**

12. Loosely install the new subframe mounting bolts.

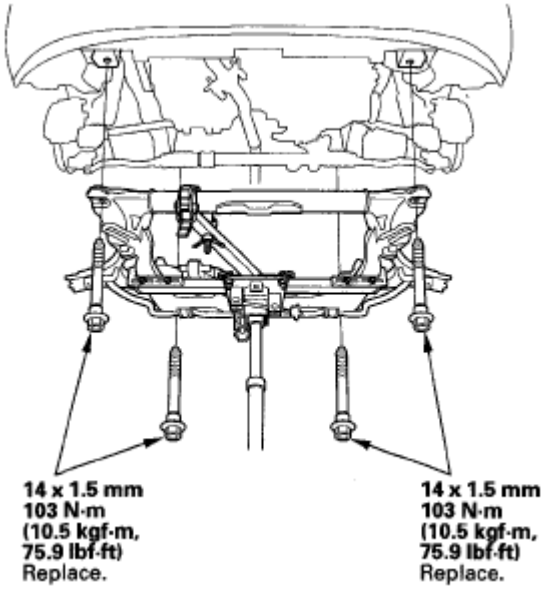


**Fig. 38: Identifying Subframe Mounting Bolts (With Torque Specifications)**

13. Align the front subframe reference marks (A) to the body (B), as noted during removal. Tighten the subframe mounting bolts to the specified torque.

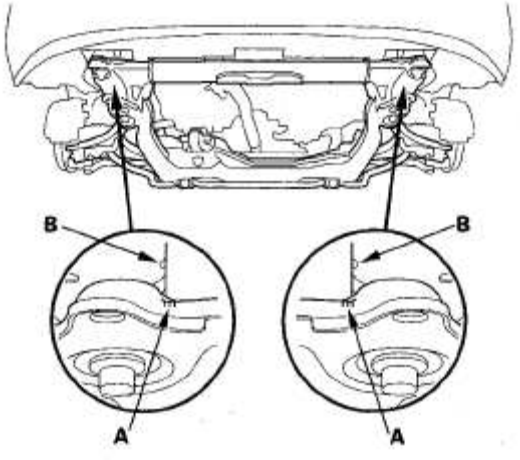


**Fig. 39: Aligning Front Subframe Reference Marks To Body**

14. Remove the jack and front subframe adapter.
15. Tighten the new mid-stiffener mounting bolts on both sides.

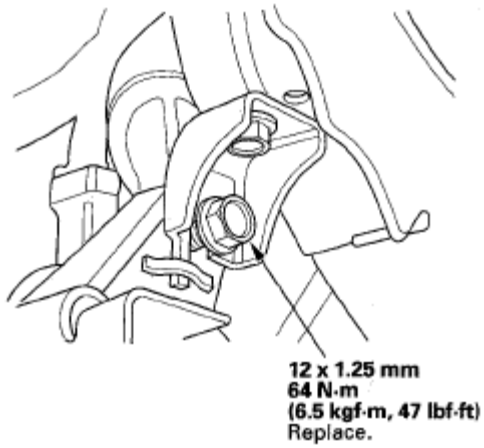


**Fig. 40: Identifying Mid-Stiffener Mounting Bolts (With Torque Specifications)**

16. Install the lower torque rod, then tighten the new lower torque rod mounting bolts in the numbered sequence shown.

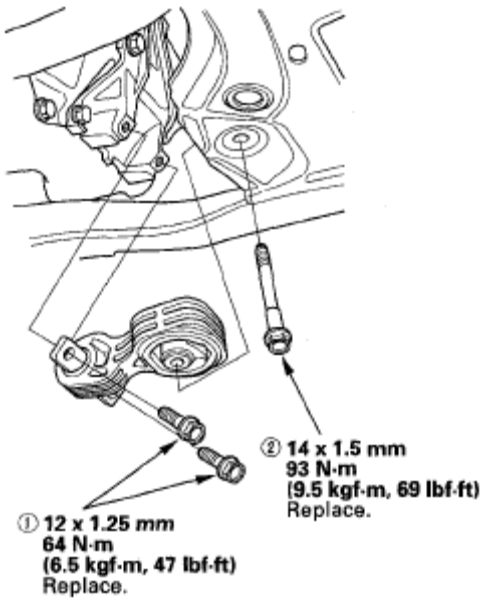


**Fig. 41: Identifying Lower Torque Rod Mounting Bolts (With Torque Specifications)**

17. Lower the vehicle on the lift, and remove the engine hanger, support eyelet, and bolt.
18. Tighten the upper torque rod mounting bolt.

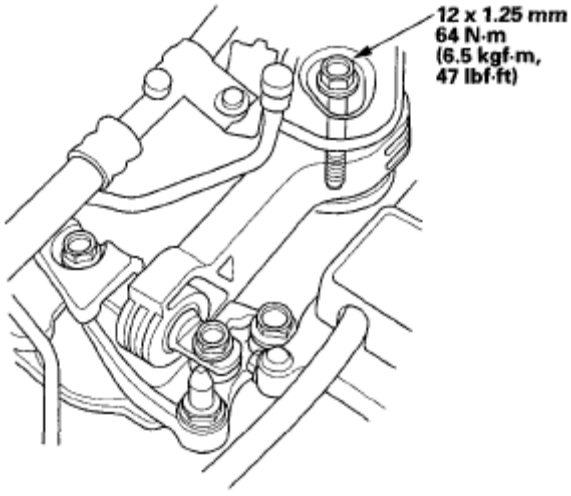


**Fig. 42: Identifying Upper Torque Rod Mounting Bolt (With Torque Specifications)**

19. Remove the engine hanger plate and bolt (A), then install the ground cable (B).

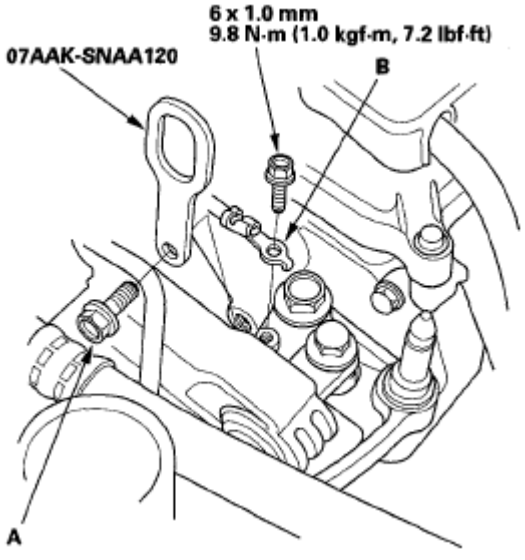


**Fig. 43: Identifying Engine Hanger Plate And Bolt (With Torque Specifications)**

20. Raise the vehicle on the lift to full height.
21. Install the steering gearbox stiffener (A), then tighten the steering gearbox mounting bolt and stiffener bolt.

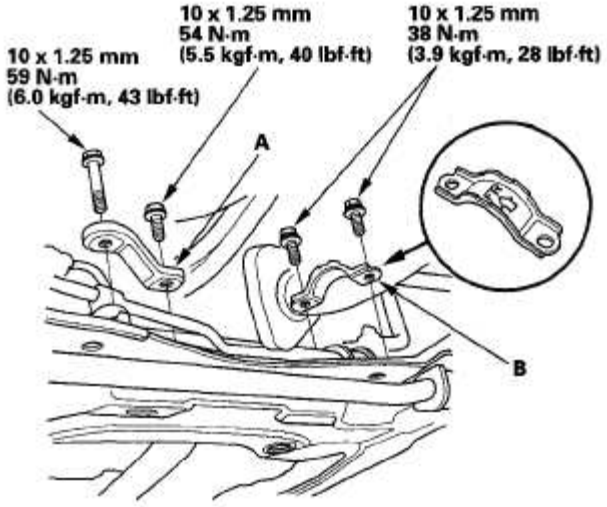


**Fig. 44: Identifying Steering Gearbox Mounting Bolt And Stiffener Bolt (With Torque Specifications)**

22. Position the "FR" mark to the front of the vehicle, then install the steering gearbox bracket (B).
23. Install the steering gearbox stiffener (A), then tighten the steering gearbox mounting bolt and stiffener bolt.

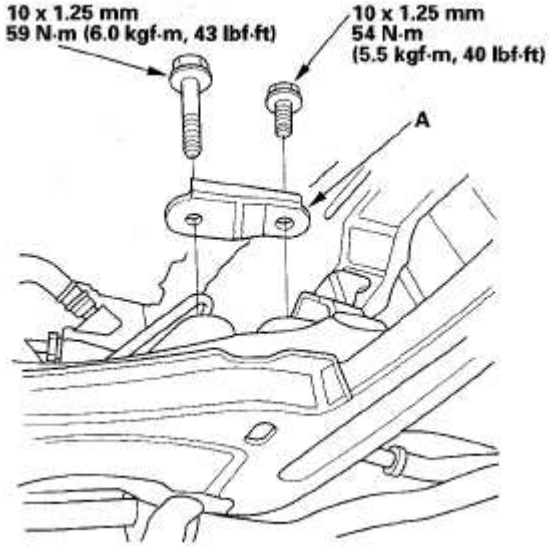


**Fig. 45: Identifying Steering Gearbox Mounting Bolt And Stiffener Bolt (With Torque Specifications)**

24. Install the power steering (P/S) line on the clamp (A), then install the P/S line

brackets (B) on the subframe.

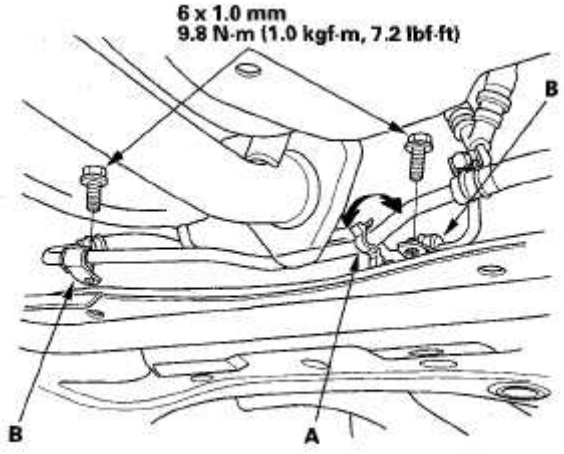


**Fig. 46: Identifying Power Steering (P/S) Line On Clamp (With Torque Specifications)**

25. Install the P/S pump.

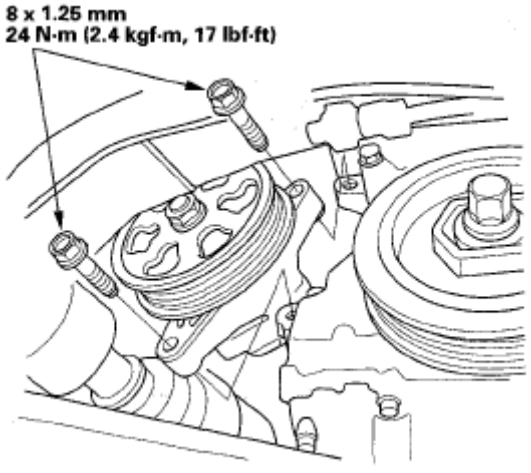


**Fig. 47: Identifying P/S Pump And Bolts (With Torque Specifications)**

26. Install the shift cable, refer to step 14 on **TRANSMISSION INSTALLATION** .
27. Install a new set ring on the end of each driveshaft, then install the driveshafts. Make sure each ring "clicks" into place in the differential and intermediate shaft.

28. Connect the lower arms to the knuckles, refer to step 9 on **LOWER ARM REMOVAL/INSTALLATION** .
29. Connect the stabilizer links, refer to **STABILIZER LINK REMOVAL/INSTALLATION** .
30. Install exhaust pipe A. Use new gaskets (B) and new self-locking nuts (C).

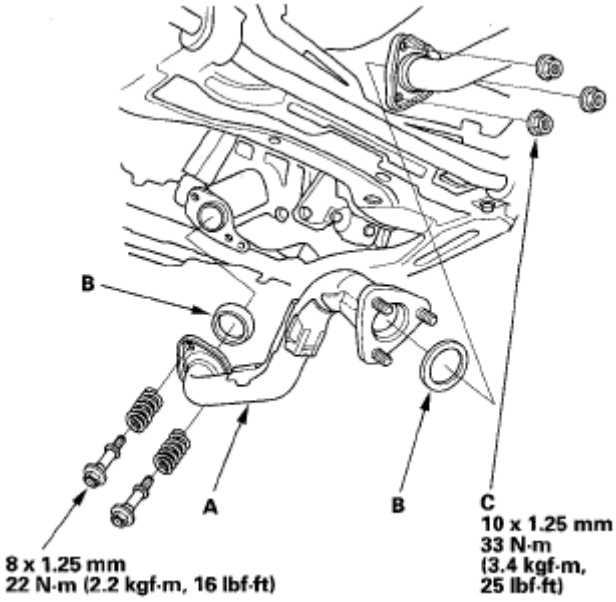


**Fig. 48: Identifying Exhaust Pipe Self-Locking Nuts (With Torque Specifications)**

31. Install the splash shield.

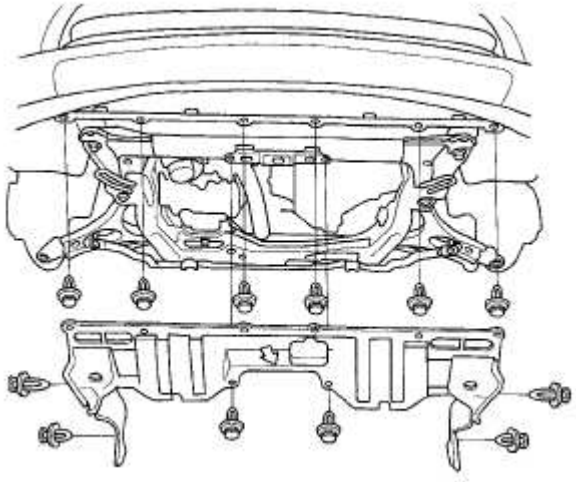

**Fig. 49: Identifying Splash Shield Clips**

32. Lower the vehicle on the lift.
33. Install the heater hoses.

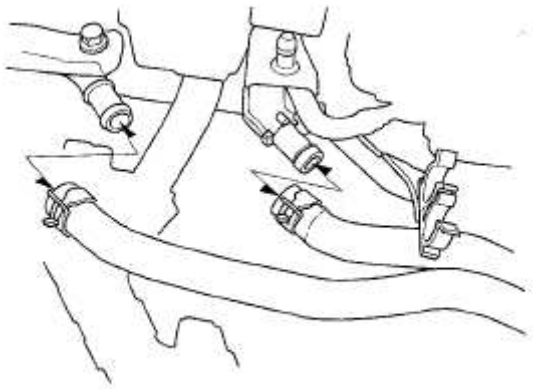

**Fig. 50: Identifying Heater Hoses**

34. Install the A/C compressor (A).

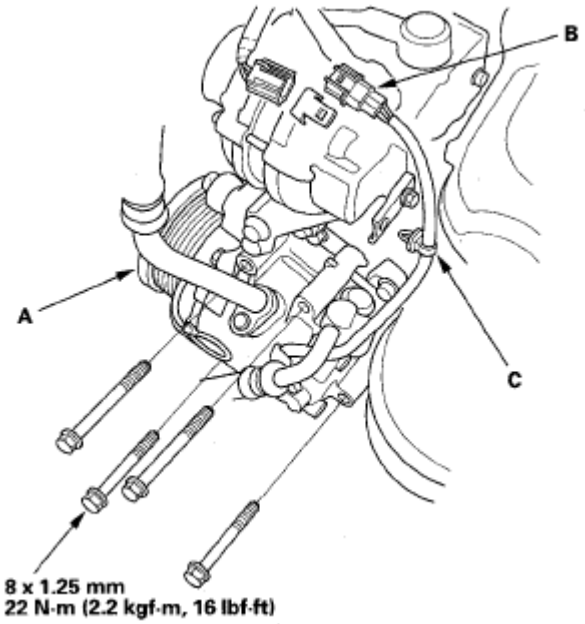


**Fig. 51: Identifying A/C Compressor And Bolts (With Torque Specifications)**

35. Connect the A/C compressor clutch connector (B), then install the harness

clamp (C).

36. Install the drive belt, refer to **DRIVE BELT REMOVAL/INSTALLATION** .
37. Remove the bulkhead, then install the radiator, refer to **RADIATOR AND FAN REPLACEMENT** .
38. Connect the powertrain control module (PCM) connectors (A) and engine wire harness connectors (B).

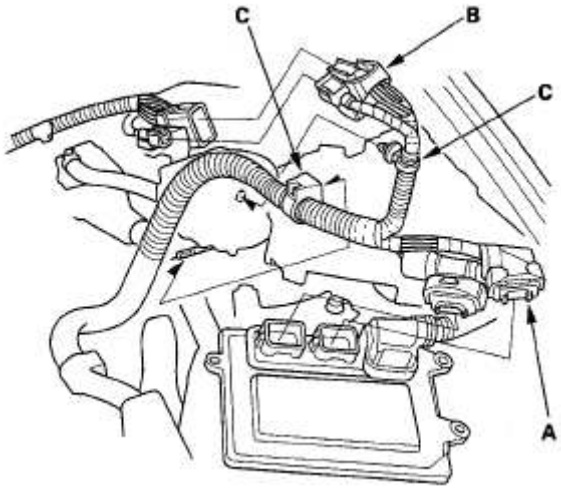


**Fig. 52: Identifying Powertrain Control Module (PCM) Connectors**

39. Install the harness clamps (C).
40. Install the PCM (A), then install the PCM cover (B).

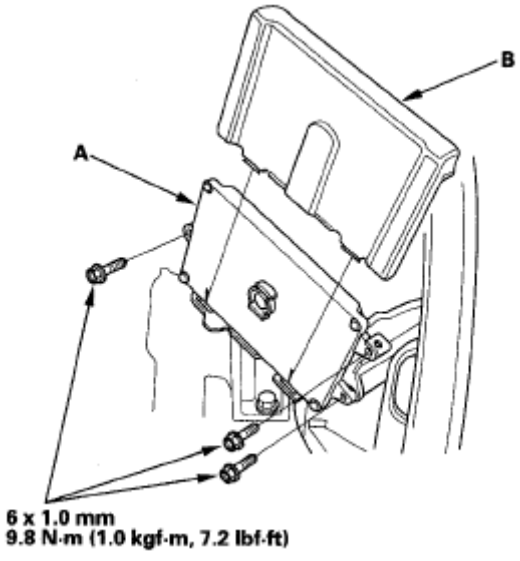

**Fig. 53: Identifying PCM Cover (With Torque Specifications)**

41. Install the battery cables (A) to the under-hood fuse/relay box.

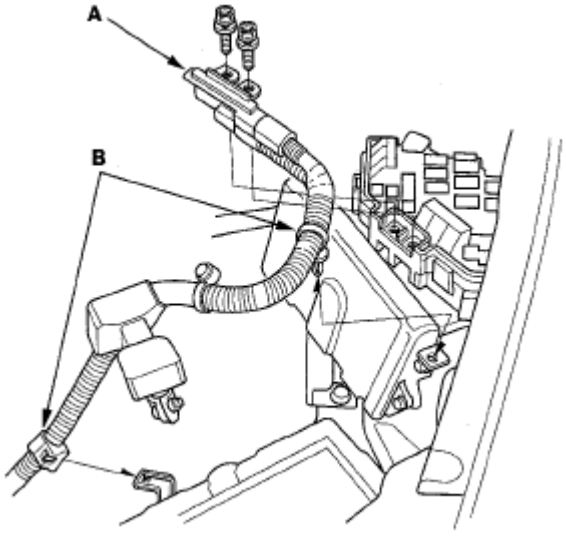


**Fig. 54: Identifying Battery Cables**

42. Install the harness clamps (B).
43. Install the vacuum hose (A), the brake booster vacuum hose (B), and the power steering (P/S) hose clamp (C).

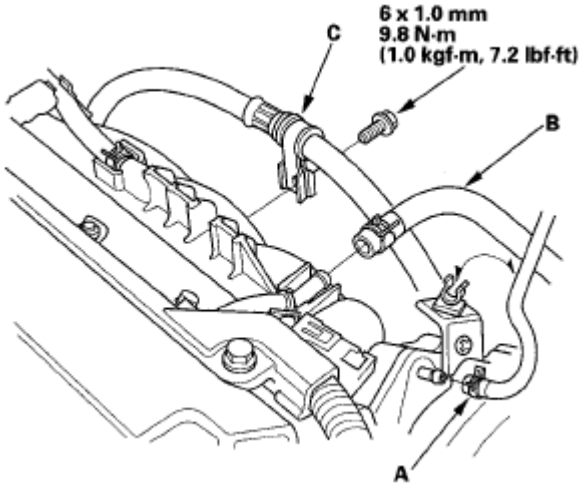


**Fig. 55: Identifying Vacuum Hose And Brake Booster Vacuum Hose (With Torque Specifications)**

44. Install the fuel feed hose (A). Use new O-ring (B).

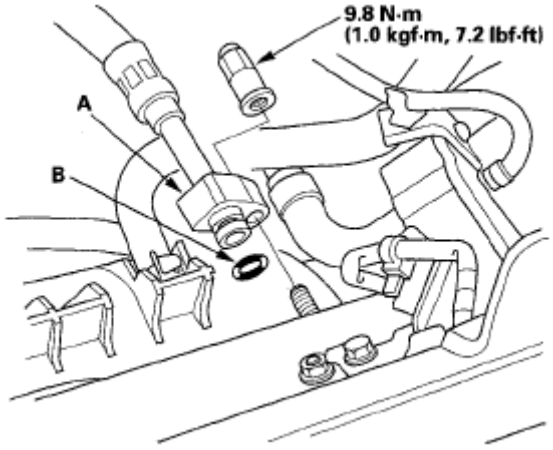


**Fig. 56: Identifying Fuel Feed Hose And O-Ring (With Torque Specifications)**

45. Install the under-cowl panel and cowl cover, refer to **COWL COVER REPLACEMENT** .
46. Install the air cleaner housing mounting bracket (A) on the cylinder head.

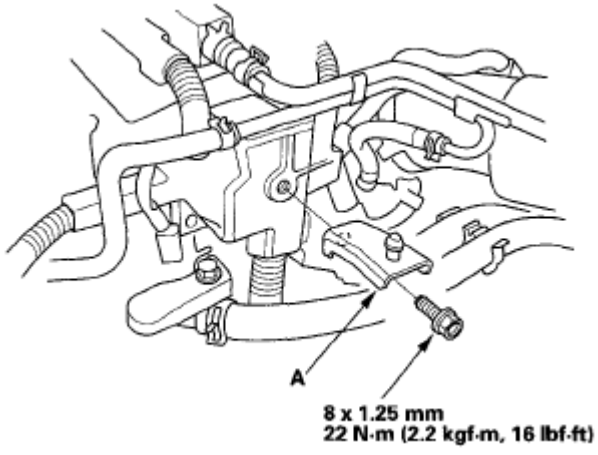


**Fig. 57: Identifying Air Cleaner Housing Mounting Bracket And Bolt (With Torque Specifications)**

47. Install the air cleaner housing, refer to **AIR CLEANER REMOVAL/INSTALLATION** .
48. Install the front wheels.

49. Install the battery. Clean the battery posts and cable terminals, then assemble them, and apply grease to prevent corrosion.
50. Move the shift lever to each gear, and verify that the A/T gear position indicator follows the transmission range switch.
51. Do the leak Inspection (see **LEAK INSPECTION** ).
52. Refill the engine with engine oil, refer to step 4 on **ENGINE OIL REPLACEMENT** .
53. Refill the transmission with fluid, refer to step 5 on **ATF REPLACEMENT** .
54. Refill the radiator with engine coolant, and bleed air from the cooling system with the heater valve open, refer to step 8 on **COOLANT REPLACEMENT** .
55. Do the PCM reset procedure (see **PCM RESET** ).
56. Do the crankshaft position (CKP) pattern clear/CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN** ).
57. Inspect the idle speed, refer to **IDLE SPEED INSPECTION** .
58. Inspect the ignition timing, refer to **IGNITION TIMING INSPECTION** .
59. Check the wheel alignment, refer to **WHEEL ALIGNMENT** .
60. Enter the anti-theft codes for the audio system and navigation system (if equipped), then enter the audio presets.
61. Do the power window control unit reset procedure, refer to **RESETTING THE POWER WINDOW CONTROL UNIT** .
62. Set the clock.